

GLEBE ROAD BRIDGE
George Washington Memorial Parkway, spanning Glebe Road
Arlington Vicinity
Arlington County
Virginia

HAER No. VA-75

HAER
VA
7-ARL.V,
3-

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

PHOTOGRAPHS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Department of the Interior
P.O. Box 37127
Washington, D.C. 20013-7127

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I. INTRODUCTION

Location: George Washington Memorial Parkway milepost 4.88; 5 miles from Interstate 495; carries GWMP over Glebe Road, just west of Chain Bridge, Arlington County, Virginia.

FHWA Structure No.: 3300-006P.

Date of Construction: 1957-1959.

Type: Continuous steel plate girder bridge.

Designer: Bureau of Public Roads (BPR)-- Region 13, Bridge Engineering Division.
National Park Service (NPS)-- National Capital Parks, Architectural Branch.
A.F. Ghiglione, BPR Regional engineer.
William Haussmann, Chief Architect.

Contractor: Wright Contracting Company.

Present Owner: National Capital Region, National Park Service.

Present Use: Carries non-commercial traffic on the GWMP over Glebe Road.

Significance: Built as part of a project to extend the GWMP closer to a proposed terminus at Great Falls, Virginia.

Project Information: Documentation of the George Washington Memorial Parkway and Clara Barton Parkway was undertaken as a multi-year project by the Historic American Buildings Survey and the Historic American Engineering Record (HABS/HAER), a combined division of the National Park Service, Robert Kapsch, Chief. The project was sponsored by the Park Roads Program of the National Park Service, John Gingles, Deputy Chief, Engineering and Safety Services Division. The Project Supervisor was Sara Amy Leach, HABS Historian. Bridge reports were prepared by Elizabeth M. Nolin (1988); Michael P. Kucher (University of Delaware, 1993); and Jennifer P. Wentzien (University of Washington, 1994).

HABS Report No. VA-69 prepared by Timothy Davis (University of Texas) provides an overview history of the entire parkway project. Jack E. Boucher and Jet Lowe produced the large-format photographs. The Washington-based summer 1994 documentation team was headed by landscape architect Tim Mackey (Harvard University, Graduate School of Design).

II. HISTORY

The Glebe Road Bridge is one of several structures designed and built in the 1950s to carry the GWMP to the CIA in Langley, VA. This portion of the parkway is built over some of the most rugged terrain in northern Virginia and had therefore previously remained undeveloped. The structure was designed in 1956 and completed in 1959 on the same contract as the Pimmit Run Bridge (HAER No. VA-74). As with most GWMP structures, the bridges were designed by Bureau of Public Roads (BPR) engineers and National Park Service architectural staff. Final approval was by the Superintendent of the National Park Service.

The architectural design of the bridge reflects the popular aesthetic of the period succinctly described by Christopher Tunnard as "the lighter and cleaner the silhouette, the better the design."¹ These ideals are expressed at this and other GWMP bridges of the post-war period in the design of metal railings, cantilevered "T" shaped piers, and a reliance on structural details for ornamentation. These ideals are in many ways the antithesis of those of Gilmore Clarke for earlier parkway bridges, as expressed in the quotation, "the more rugged the scenery and the surroundings, the more rustic may be the bridge."² The continued influence of the "rustic" style is evident in the stone-faced guardwalls along approaches to the bridge. However, the irregular stone facing and lack of a granite coping stone is somewhat cruder than the masonry detailing at earlier parkway bridges. The curved and sloped bridge deck allows for continuous roadway curvature, an important principle of parkway design. The sodded median strip contributes further to the design of a bridge which offers the least visual interruption to the roadway and the surrounding landscape.

Description

The Glebe Road Bridge is a four span continuous steel plate girder bridge supported on concrete piers and abutments. The bridge is designed with a slight horizontal curvature and slopes downward 20' from east to west. The bridge is comprised of two 150' spans, one 117' span, and one 105' span. The total length including wing walls is 602'. The roadway is two 24' lanes separated by a 6' median with 2' curb strips and 2'-6" sidewalks. The total width is 68'. The concrete bridge deck is 75' above the roadway.

The bridge is built over rugged terrain on steep slopes. A nearby watermain precluded blasting and so excavation was by drilling and hand methods. Deep footings were placed over leveling courses necessary on the steep, rocky terrain.³ Reinforced concrete abutments are of the counterfort type (stepped) with the counterfort supporting wing walls. Three "T" shaped reinforced concrete piers are supported on spread footings. The pier cross beams are 6' wide and cantilever 22'-6" from the stem. The pier stems are 6' wide and 20' long with rounded ends. Formwork for the concrete was structural steel with plywood lining. Ready mix concrete was supplied by Howat Concrete Company of Washington D.C. The heavily reinforced concrete cantilever cross beam of the "T" shaped pier provides a seat for the steel girders. The continuous steel plate girder and floorbeam system in turn supports the bridge deck. Structural steel was fabricate and furnished by the Phoenix Bridge Co., Phoenixville, PA. The prime contractor erected the

¹Christopher Tunnard, Manmade America: Chaos or Control?, 1963, p. 244.

²Gilmore Clarke, "Architecture of Short Span Bridges," from Arthur G. Hayden, The Rigid Frame Bridge, p. 227.

³Bureau of Public Roads, "Final Construction Report, Project 1A9-10," p.6.

steel. Plate girders are riveted except for splices which are bolted. The cast-in-place deck slopes down 21' from east to west over its length. L. B. Foster Company of New York furnished and erected the Alcoa® cast aluminum railings and posts.

The bridge is designed for a standard H-20 loading of the American Association of State Highway Officials. Final construction costs for the combined contract for Pimmit Run Bridge and Glebe Road Bridge were reported as \$1,141,196.75 for construction and an additional \$42,685 for engineering.⁴

Alterations

The bridge was reconstructed by the National Park Service in 1982. Aluminum railings have been replaced with steel and there is no longer a walkway.

III. SOURCES

U.S. Department of Commerce, Bureau of Public Roads. Plans for Proposed Projects 1A8; 1A9; 1A35; 1A47. Microfiche reductions of original construction drawings on file at National Capital Region Park Headquarters, National Park Service, Washington D.C.

U.S. Department of Commerce, Bureau of Public Roads. "Final Construction Report, George Washington Memorial Parkway, Project 1A9-10, Steel Viaducts over Glebe Road and Pimmit Run, Arlington and Fairfax County, Virginia." Submitted by D. Hugh Brown, Resident Engineer, 14 October 1959. On deposit at FHWA, Sterling, Virginia.

U.S. Department of the Interior, Historic American Buildings Survey (HABS), No. VA-69, "George Washington Memorial Parkway," 1994. Prints and Photographs Division, Library of Congress, Washington D.C.

⁴Bureau of Public Roads, "Final Construction Report, Project 1A9-10."